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Approved For Release 2002/05/17 : CIA-RDP78-04163R000100140006-0

DIA REVIEW COMPLETED

21 February 1975

MEMORANDUM FOR THE RECORD

SUBJECT : Meeting with Mr. Blake 25 February on the subject of Human Factors Support

REFERENCE: (a) My memorandum to DD/A, subject as above, dtd 11 Nov 74  
(b) DD/A memorandum to D/MS, no subject, dtd 27 Nov 74 (DD/A 74-4681)  
(c) My memorandum to DD/A, subject as above, dtd 10 Dec 74

1. Shortly after my return from the EA Conference, I received an invitation from Mr. Blake to meet with him and discuss Human Factors Support as per the reference memoranda. In opening the conversation, Mr. Blake stated that he simply did not know where the answer was to the question of need for authorized positions in support of the additional requirements in the area of human factors. He said that he was indefinite on the subject for several reasons. First of all, he advised that our office, along with several others in the DD/A, would be receiving letters signed by himself inviting our respective attentions to the fact that we were overstrength. The letters would request office plans as to how we intended to be at authorized strength by the end of the fiscal year. Mr. Blake stated that this exercise related to the question as to the need for the surplus exercise. The question of need for a surplus exercise had been surfaced early in the year but had been shelved until 1 April since there had not been any conclusive evidence available. It was Mr. Blake's view that the possibility of a surplus exercise might well be one of the solutions to the problem of being overstrength. In addition, Mr. Blake recalled that OMB had asked the Director to take an additional cut of 400 slots for FY 75 and 76. The Director had written a letter to the President requesting relief from any such requirement. The President, in turn, had responded by paring down the requirement to 100 slots so that the Agency is faced with that problem to be solved by 1 May. However, during this period, the Director has also accepted another responsibility that requires 40 additional slots for the DD/I. It seems therefore that there may well

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31 December 1983  
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SUBJECT: Meeting with Mr. Blake 25 February on the subject  
of Human Factors Support

be 140 slots to come out of the 3 remaining directorates. Hence, for all of the foregoing reasons, Mr. Blake advises that there is no way for him to respond to our request until possibly after the first of May.

2. It was pointed out that our basic paper was also interested in obtaining the DD/A views as to the appropriateness of the Research Branch of PSS being engaged in the area of human factors research. Mr. Blake advised that it was his view that our office should stay in that business. It was his feeling that such services are non-bureaucratic and are what he terms positive services. In addition, such services help provide insight into the Agency activities. For such reasons then, Mr. Blake would be interested in staying in the human factors business. Accordingly, he has no objection to any actions on our part that we might take in order to solve our problems. It was his view that if we could keep it together for a year, we would have a much clearer view as to where we and other parts of the Agency are going. He points out the imminence of Senate and House investigations and the futility of attempting to guess how such will turn out. It would fall within the realm of possibility that there may emerge views of needed reorganization especially as related to efficiency and duplication in the overall Intelligence Community. He opined that things would be a lot clearer 25 February 1976. In the meantime, he suggested not overlooking the use of parttime help. He and several others are attempting to establish a definition of parttime employment not to exceed 62 hours per pay period. While such provision is legal and within the prescribed regulations of the Civil Service Commission, the question of this definition will be reviewed by the Director in terms of appropriateness for this Agency.

3. In response to specific questions, Mr. Blake was doubtful that there would be much merit at this time in taking this problem to the Comptroller or the Director or the Management Committee.



JOHN R. TIETJEN, M. D.  
Director of Medical Services

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Attachments

OMS/JRT:jv

Distribution:

~~Orig - D/MS Subject Files~~

1 Approved For Release 2002/05/17 : CIA-RDP78-04163R000100140006-0

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*DDA*

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~~ADMINISTRATIVE-INTERNAL USE ONLY~~

10 December 1974

MEMORANDUM FOR: Deputy Director for Administration  
SUBJECT : Human Factors Support  
REFERENCE : Your memorandum of 27 November 1974  
(DD/A 74-4681)

As requested, the following information is provided.

1. Present

Estimate of time devoted to categories of support:

- |  |     |
|--|-----|
| a. Unilateral Agency (non-National level programs)   | 50% |
| b. National level programs wherein the Agency is a participant   | 10% |
| c. Direct tasking from other Government agencies (non-National level programs) is 0%; however requests from other Government agencies (National level programs) is | 40% |

(The attached paper from C/PSS deals with this matter in somewhat greater detail.)

2. Future

It is our judgment that the same percentages will prevail in the future.

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JOHN R. TIETJEN, M.D.  
Director of Medical Services

Attachment

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OMS/Ex0/[redacted]:ned

Distribution:

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6 December 1974

MEMORANDUM FOR: Executive Officer, Office of Medical Services  
SUBJECT : Human Factors Support  
REFERENCE : DD/A 74-4681

1. The three conditions outlined in Mr. Blake's memo under which research requirements come to PSS are conceptually distinct but difficult to distinguish in practice because of the dual responsibilities of Agency components whose tasking of us is both in service of unilateral Agency needs and also in support of "National level programs". Generally speaking, the requirements coming to us from the DDI Special Study Group, NPIC, and OD&E all represent this kind of confounding. At the same time, all tasking mediated by other government components involves "National level programs" in which the Agency is not only a participant but is intimately involved in such a way that it can fairly be said that our contribution is directly or indirectly in support of a significant Agency interest. Put another way, none of the tasking by other government components serves the needs of those components exclusively.

2. That problem aside, we can deal much more explicitly with the question of percentages of time allocated to Agency-generated (internal) projects and those coming to us via another government Agency. This split is 60% - 40%, respectively; both in current and projected allocations. Since some of the former and all of the latter are in the "National level programs" category, we are talking about a present and future commitment of PSS research resources to National level programs at a level of at least 50%.

STATINTL

Chief, Psychological Services Staff  
Office of Medical Services

DD/A 74-4681

27 NOV 1974

MEMORANDUM FOR: Director of Medical Services

John:

1. I have read, and am impressed by, your paper of 11 November on "Human Factors Support." I would be less than honest, however, if I did not say I was equally impressed with the problem of trying to find a source for some personnel ceiling relief for you. In groping with the problem, however, I think a little further analysis of what you are faced with might be mutually helpful to us.

2. The work being performed that is described in your paper is being done under three different conditions:

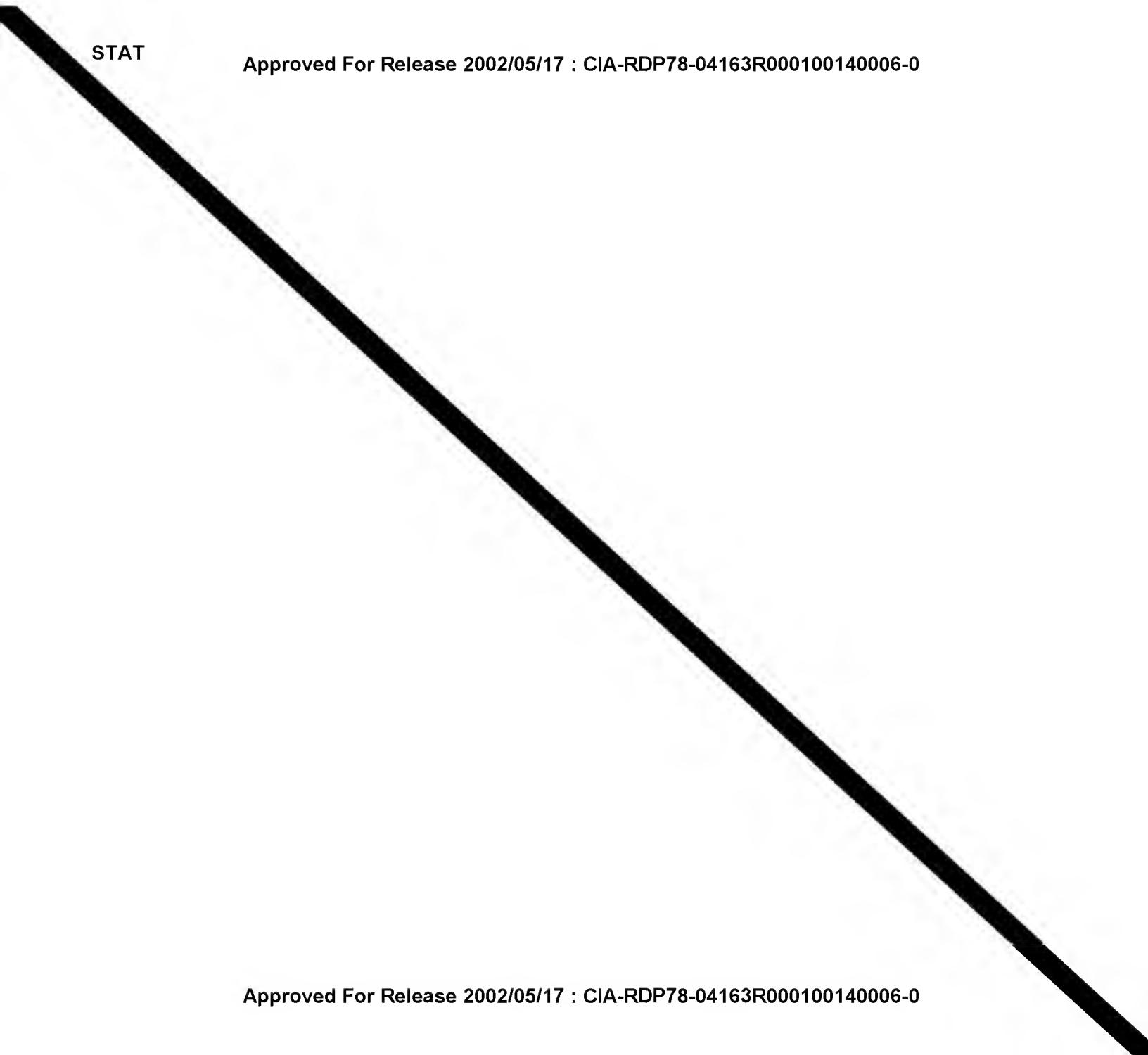
- a. unilateral Agency support;
- b. support to "National level programs" wherein this Agency is a participant; and
- c. on behalf of direct tasking from another Government Agency, i.e., DIA.

It may or may not be that some relief can be obtained by looking elsewhere than in the Agency itself. Accordingly, would you ask your appropriate people to do the following. Of the total workload now undertaken by on-duty people, give me an approximation of the percentage of total time available that goes to the three sources of tasking. Additionally, and based on your estimate of future projected requirements, again give a percentage against the three sources of tasking. Depending on what the facts are, there is a possibility--but not more than that--that I might be able to work something out either with DD/S&T, on behalf of "National level programs," or with the IC Staff, on behalf of direct tasking from other elements of the Intelligence Community. I believe the approach is worth a try, so let's see where it leads us.

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John F. Blake  
Deputy Director  
for  
Administration

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Original

11 NOV 1974

MEMORANDUM FOR: Deputy Director for Administration  
SUBJECT : Human Factors Support

1. This memorandum is to apprise you of recent significant increases in demands on the Psychological Services Staff of this office in the area of human factors support, and is submitted in conjunction with the 6 November PSS briefing on this matter. Paragraph 3 contains a recommendation for meeting these demands.

2. In recent months Agency and Intelligence Community elements have approached the PSS with requests for assistance in human factors research. It is our impression that these requests are valid and often seemingly high priority, although we do not believe that we can determine the relative priorities involved. Requests for this assistance have come from IAG/NRO, USAF/NRO, ITC/DIA, SSG/DDI, OBG/DDI, OD&E/DDS&T, NPIC/DDS&T and OC/DDA. We believe these elements are coming to PSS/OMS because PSS maintains the only in-house capability for this type of research support in the Agency, and, so far as we are aware, in the Community. It is also our impression that many of the requests cannot be met by outside contractors. Indeed, in connection with some of the requirements, outside contractors are already at work, and the current need is for in-house expertise to monitor the outside work. Attached is a brief history of the development of these requirements and statement of current needs.

3. We have carefully considered these new requirements against PSS capabilities and other requirements. It is our best judgment that in order to satisfy all current and foreseeable human factors support requirements, four (4) additional Ph.D.-level full-time psycholo-

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31 December 1982

(Initial date of issue)

SUBJECT: Human Factors Support

gists are required, with two of these required as soon as possible and the other two within six months. Accordingly, it is recommended that four additional contract ceiling positions and \$85,000 in funds (annual basis) be authorized the OMS to permit the recruitment of four full-time contract psychologists.

SIGNED  
JOHN R. TIETJEN, M.D.

JOHN R. TIETJEN, M.D.  
Director of Medical Services

Attachment

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OMS/Ex0/W[ ]:ned (6Nov74)

Rewritten and Retyped - OMS/Ex0/[ ]:ned (11Nov74)

Distribution:

Orig & 1 - Addressee  
1 - C/PSS  
1 - C/SD  
~~✓~~ - D/MS Files

25X1A

6 September 1974

Current Statement of Psychological Research

Activities and Needs

For many years, the Psychological Services Staff (PSS) has offered the Agency a wide variety of services. These services have included such activities as psychological testing and assessment, counseling, operational support, and applied psychological research. The psychological research performed over the years by PSS can further be subdivided into four general areas: (a) Direct Support to the Assessment Branch of PSS. Included in this area are those research activities which directly support the assessment and testing programs of PSS. These activities include studies of test reliability and validity and the establishment of test norms. (b) Performance Prediction Studies. Here the results of psychological testing and assessment are correlated with various measures of job performance in an attempt to identify the critical dimensions of job performance so that the future selection of employees for those jobs can be made more effectively. (c) Attitude Survey Research. Here the attitudes of employees toward their jobs are measured

for the purpose of establishing a data base to aid managers in making organizational decisions, establishing career development programs, and improving employee motivation, morale, and productivity. (d) Human Factors Research. Human factors is broadly defined as the area of applied experimental psychology which deals with optimizing the overall performance of a system by designing and integrating the elements of that system in accordance with the known principles of human behavior.

Human factors represents a new area of research involvement for PSS, having begun in late 1971. The initial involvement of PSS in the human factors area was the support provided by the Research Branch (RB) of PSS to an OSA drone aircraft program. We conducted an evaluation of the aircraft's vulnerability to visual detection, and we assisted in the evaluation of human-engineering and command-and-control recommendations made by external contractors.

In early 1972 we began a series of studies for the Cartography Division of OBGI. The major objective of these studies was to provide human factors information on some of the stimulus dimensions used in map construction. In one of these studies, the human perceptual response to various colors used in map production was measured by psychophysical scaling techniques. The results will enable CD/OBGI to utilize color to transmit cartographic information to intelligence consumers more effectively.

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In 1972 we were requested to provide human factors

support to the COMIREX Color Evaluation Working Group. The purpose of this effort was to determine the comparative exploitation efficiency of color and black-white films in satellite photographic reconnaissance. Our principal responsibility was (a) to design the experiment tests to assess photointerpreter performance with black-white and color films, and (b) to statistically analyze and interpret the data from these studies. To date, we have performed these functions in nine separate studies in this continuing series.

Several new human factors studies began in 1973. We were asked to advise the Automation Task Force of [ ] concerning STAT the possible effects on reader efficiency of printing the [ ] STAT [ ] entirely in upper case letters rather than in STAT mixed upper and lower case letters as is now presently done.

The Automation Task Force has devised a system for automating production of the [ ] and can achieve considerable cost savings in implementing this system if the upper case output format is used. We conducted an extensive search of the human factors literature on the comparative readability of text printed in various case formats, and in a detailed paper on this topic we advised the Automation Task Force that considerable degradation in reading efficiency can be expected if this change in text format is made. With our documentation of this fact in hand, the Automation Task Force expects to be able to procure

the additional funds necessary to automate the printing of the  
STAT [redacted] in mixed upper and lower case letters.

In a second human factors effort undertaken in 1973 for

[redacted] we attempted to determine some of the factors responsible  
STAT for differences in the job performance [redacted]

STAT [redacted] We recommended an investigation of (a) differences  
in auditory acuity, (b) the [redacted] knowledge of the culture

[redacted]

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In a third human factors effort initiated in 1973, we responded to a request from the Special Programs Working Group of NPIC to make recommendations concerning the optimal work-space design and layout of a facility which will be part of a future satellite reconnaissance program. As a related part of this effort, we anticipate a request to assist in devising a psychological assessment program for use in selecting image interpreters to work in this new and highly unusual image interpretation work environment.

Several new human factors projects have developed during the first six months of 1974. In one of these we assisted the Technical Planning Staff/IEG/NPIC in performing a time-and-motion study, using questionnaire methodology, on the methods and procedures employed by IEG photointerpreters. One of the major

objectives of this study was to determine whether the various photointerpretation specialities place sufficiently different demands upon the interpreter to justify the cost of converting from the single type of work environment now employed with all interpreters to different work environments for each of the

25X1D different interpreter specialities.

[Redacted]

At this moment, we are attempting to respond to a tremendous increase in requests for human factors psychological research support. We have been asked by the Imagery Division/DEG/OD&E (see Attachment A) to perform the initial human factors evaluation of two new light tables currently being developed by external contractors. This effort will require us to design a test plan for evaluating photointerpreter performance and to be able to compare the level of interpreter performance obtained with these tables with the performance typically obtained with the light tables currently in use. We will also be expected to make human engineering recommendations concerning possible improvements in the physical design and configuration of the new light tables. In addition to this effort, the Imagery

Division plans to have us perform human factors evaluations of other equipments at appropriate stages in their development. Hence, we see the request for support to ID/DEG/OD&E as a continuing effort.

We have also been asked to provide similar services to the DIA Imagery Transmission Committee (see Attachment B). The purpose of the ITC effort is to develop a system to transmit

25X1D [redacted] to various users in the intelligence community. Our task will be to perform human factors evaluations of the individual equipments to be used in this system and to make recommendations concerning the optimal interrelationships among these equipments from a human factors standpoint. More information about this system can be found in Attachment B.

In what is clearly the greatest demand for our services 25X1A to date, we are attempting to respond to three separate requests to provide human factors support to two highly classified [redacted] Study programs, both of which involve special kinds of satellite reconnaissance imagery. One of these requests is from the Requirements Evaluation Group of the DDI Special Study Group. REG's task is to evaluate the utility of this special imagery to the intelligence analyst community and to determine the ability of this imagery to satisfy certain standing intelligence requirements. We have been asked to assist in this activity (a) by evaluating image interpreter performance scores, and (b) by performing the statistical manipulations of the interpreter performance data

necessary to quantify the degree of requirements satisfaction.

A second request for human factors support to these programs has been made by the Imagery Analysis Group (see Attachment C). We have been asked by IAG to provide a considerable variety of human factors and data analysis support, and to meet this request adequately we will have to assign two of our psychologists to this project on a nearly full-time basis.

We have also received a request from a classified Air Force program office to provide additional human factors support to one of these programs. This support would require us to assign one psychologist to this project on a nearly full-time basis.

From this brief but busy history of PSS/RB involvement in Agency programs requiring human factors psychological research support, it is possible to draw several conclusions. First, it is clear that our involvement in this type of effort has grown in a geometric fashion since our initial human factors effort in 1971. We see no signs of abatement in the volume of requests for this type of support. Second, it is equally clear that no other Agency component possesses either the expertise and background or the sufficiently broad charter necessary to respond directly and effectively to the types of requests for support outlined in this paper. Consequently, we are proposing (a) that the Research Branch of PSS be officially recognized as the Agency component to whom requests for direct support in the human factors area be addressed, and (b) that the Research Branch of PSS be authorized to add four Ph.D. level psychologists to its staff at the earliest

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possible time. The acquisition of additional personnel resources in this area is absolutely vital if we are to continue to provide quality service and remain responsive to Agency needs. Although the proposed increase of four psychologists appears adequate to handle human factors projects for the immediately foreseeable future, we wish to add that the volume of requests for psychological research support in the other areas outlined in Paragraph 1 of this paper has also increased markedly in the past two years, and we are constantly challenged to utilize our limited personnel resources in the most effective possible way. A favorable response to the present proposal would enable PSS to offer the Agency the truly comprehensive range of psychological services its name implies.



Chief, Research Branch  
Psychological Services Staff  
Office of Medical Services

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ATTACHMENT A

25X1A

MEMORANDUM FOR: [REDACTED] Chief/PSS/OMS  
SUBJECT: Request for Human Factors Testing Support

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1. I would like to request that [REDACTED] of your organization support one of our current development efforts in the area of human factors testing. This present development involves the construction of two new prototype light tables for NPIC, and I would like [REDACTED] to help our photointerpretation people to evaluate both the human engineering aspects and the effectiveness of these tables. This request has stemmed from [REDACTED] past successful consultation with NPIC and his resultant familiarity with the work, and our own requirement to develop an in house resource for this kind of work which has become extremely expensive on the competitive marketplace.

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2. The major extent of [REDACTED] support would be a quick look evaluation of these tables on the West Coast which would be expected to last no more than 3-4 days. This is scheduled to occur around the third week in October. It would involve some testing and a short report on the results. In addition, I would like [REDACTED] to consult with us on our major evaluation program for these tables here at NPIC which could begin after the turn of the calendar year (Jan. or Feb.). In the more immediate future, I would like [REDACTED] to attend a Critical Design Review for the systems on 20 May on the West Coast. This would set the stage for his further participation later in the program.

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3. Should there be any questions on your part concerning this, I would be glad to try to answer them. My phone extension is 3308. Some sort of indication as to the amount of support you would be willing to lend us would be appreciated.

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[REDACTED]  
Chief, Imagery R&D Division

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Approved For Release 2002/05/17 : CIA-RDP78-04163R000100140006-0

Approved For Release 2002/05/17 : CIA-RDP78-04163R000100140006-0  
ATTACHMENT C

24 May 1974

MEMORANDUM FOR: Director, Office of Medical Services, DDM&S  
FROM : Image Analysis Group  
SUBJECT : Request for Psychological Analysis Support

1. The Image Analysis Group (IAG) is currently engaged in the detailed evaluation of imaging systems. Identical data resulting from

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[redacted]  
concerned with engineering data.

2. At the request of the IAG, [redacted] from the Office of Medical Services, met with IAG representatives on 8 May 1974 to discuss in detail the nature of our evaluations and relationships with [redacted]. It was apparent from our meeting that [redacted] could provide valuable support to our effort in the following areas:

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a. consultation support to and assistance in directing the [redacted] human factors effort;

b. contract monitoring should this become a desirable course of action;

c. consultation support and recommendations to the IAG in regard to the [redacted] analyses which impact on our evaluation methodology; and

d. over-all guidance for the statistical analysis of IAG data.

3. If acceptable, the IAG requests the above effort be initiated at the earliest possible time and be continued through the late 1975 time frame.

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[redacted]  
Chief, Imaging Analysis Group

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6 September 1974

MEMORANDUM FOR: Director of Medical Services  
SUBJECT : Urgent Need for Additional Personnel  
for PSS Research  
REFERENCE : Current Statement of Psychological  
Research Activities and Needs  
(Attached)

1. It has become increasingly apparent in recent months that the growing demand for research services offered by the Psychological Services Staff is rapidly outstripping our capability to respond appropriately to these demands. This is particularly true in the area of human factors research, where our Staff maintains the only Agency in-house capability to provide the kind of in-house research support to developmental projects essential to their fulfillment. Many of these needs simply cannot be met by outside contractors. Indeed, much of the demand arises from projects where outside contractors are already at work, and the need for in-house expertise to guide and monitor the outside work must be met if the large sums of money allotted to these activities are to be managed intelligently. Even if we were to commit all of our present resources to these new research demands, neglecting other areas of on-going research which we consider vital to maintenance of a balanced research program, we could not meet all of these requirements.

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2. I have asked the Chief of our Research Branch, [redacted] to draw up a current statement of the research picture, including an estimate of the resources needed to meet the demands. This statement is attached, with appropriate documentation. Much of this material was presented

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SUBJECT TO GENERAL DECLASSIFICATION SCHEDULE  
OF E.O. 11652, AUTOMATICALLY DOWNGRADED AT  
TWO YEAR INTERVALS AND DECLASSIFIED ON  
[redacted]  
6 September 1982  
(Insert date or event)

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SUBJECT: Urgent Need for Additional Personnel for PSS Research

in a recent oral briefing to you and to DD/MS. I have reviewed this statement carefully, and consider it an accurate picture of the present situation. More importantly, I see it as an accurate assessment of the outlook for the foreseeable future, with demand sustained and increasing rather than subsiding.

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3. [redacted] concludes that four Ph.D.-level psychologists are needed at the earliest possible date. I concur in this request, and urge that immediate consideration be given to exploring ways of meeting this need.



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Chief, Psychological Services Staff  
Office of Medical Services

Attachment  
As stated above

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## Human Factors Projects

<u>Component</u>	<u>Man Years</u>	
	<u>Minimum</u>	<u>Ideal</u>
IAG/NRO	2.00	3.00
Air Force/NRO	.50	1.00
ITC/DIA	.50	.50
SSG/DDI	.50	1.00
OD&E/DDS&T	.25	.75
NPIC/DDS&T	1.00	1.50
	<u>4.75</u>	<u>7.75</u>

## Other Research

AB/PSS	1.00	1.00
LLC/OTR	1.00	1.00
CTP/OTR	.50	.50
DCD	.25	.25
CI-BAB	.25	.25
Attitude Surveys	.25	.25
	<u>3.25</u>	<u>3.25</u>

Total	8.00	11.00
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